

ROTARY BASEBALL BATTING PRACTICE DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates generally to a device for practicing batting of baseball, and in particular to a rotary baseball batting practice device wherein the angular location of a stand that supports a baseball to be batted can be changed by means of rotation about a center under the control of a bi-directional ratchet mechanism.

2. The Related Art

[0002] Baseball batting practice devices are known. The baseball batting practice device comprises an upright holder that is rotatably mounted to a home plate for supporting and positioning a baseball. The upright holder is selectively retained at different discrete angular positions by means of a rotation mechanism. Such a rotatable construction of the baseball holder allows a player to selectively set a baseball supported by the holder at different angular positions. However, the holder is set at an angular position by having a spring-biased pin removably fit into angularly discrete retention holes defined in the home plate. The operation of moving the holder between different retention holes requires both hands of a user wherein one hand releases the pin and holds the pin in the released condition against the biasing spring and the other hand moves the baseball holder with the pin disengaging from the retention holes. This is very troublesome for the player for he or she must put down the bat before he or she can operate and move the baseball holder.

[0003] Thus, it is desired to have a baseball batting practice device that allows for one hand operation to overcome the problems encountered in the prior art.

SUMMARY OF THE INVENTION

[0004] Therefore, a primary objective of the present invention is to provide a baseball batting practice device that allows for single hand operation to selectively positioning a baseball to be batted at different angular locations by means of a bi-directional ratchet mechanism.

[0005] Another objective of the present invention is to provide a baseball batting practice device that allows for selectively positioning a baseball to be batted at different angular positions and further allows for selectively setting the baseball at different positions along a radial direction in a secured manner.

[0006] To achieve the above objectives, in accordance with the present invention, there is provided rotary baseball batting practice device comprising a home plate having a center axle extending upright from the home plate. An elongate, radially extending bar has a first end defining a hole through which the center axle extends whereby the bar is rotatable about the center axle on the home plate. A bi-directional ratchet mechanism including a toothed disc and a pawl member engageable with each other is arranged between the home plate and the bar to allow for angular displacement of the bar with respect to the home plate. A stand is mounted to the bar and extends upright from the bar to support a baseball on a top end thereof. The stand comprises a slide movably received in a radially extending channel defined in the bar whereby the stand is linearly movable with respect to the center axle in a radial direction.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The present invention will be apparent to those skilled in the art by reading the following description of a preferred embodiment thereof, with reference to the attached drawings, in which:

[0008] Figure 1 is a perspective view of a baseball batting practice device constructed in accordance with the present invention;

[0009] Figure 2 is an exploded view of the baseball batting practice device of the present invention; and

[0010] Figure 3 is a top plan view of the baseball batting practice device of the present invention in which phantom lines show a destination angular position to which a stands that supports a baseball thereon is to moved from an initial angular position shown in solid lines.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] With reference to the drawings and in particular to Figure 1, a baseball batting practice device constructed in accordance with the present invention, generally designated with reference numeral 10, comprises a home plate 12 positionable on for example the ground of a practice field. The home plate 12 has a top face 14 on which an upright stand 16 is rotatably mounted by a rotary mechanism 18 whereby the stand 16 can be selectively moved from an initial position (shown in solid lines in Figure 3) to any desired destination position (shown in phantom lines in Figure 3) by rotation about a center axle 20 of the rotary mechanism 18. The stand 16 has a lower end mounted to the rotary mechanism 18 and an opposite upper end forming a conical cavity 22 for receiving and supporting a baseball (not shown) therein.

[0012] Also referring to Figure 2, the rotary mechanism 18 comprises a toothed disc 24 fixed to the top face 14 of the home plate 12 by any known means. A threaded rod, serving as the center axle 20 of the rotary mechanism 18, vertically extends through the home plate 12 and a center of the disc 24. An elongate channel bar 28 has top and bottom walls 30, 32. Aligned holes 34 are defined in the top and bottom walls 30, 32 of the bar 28 at a location close to an inner end of the bar 28. The threaded rod 20 extends through the holes 34 and engages a nut 36 thereby securing the bar 28 to the home plate 14 with the bottom wall 32 of the bar opposing the top face 14 of the home plate 12 and the bar 28 being allowed to rotate about the threaded rod 20. Preferably, a washer 38 is interposed between the nut 36 and the top wall 30 of the bar 28. Thus, the bar 28 extends radially with respect to the center axle 20.

[0013] A pawl member 40 in the form of a plate having an inner end forming teeth 42 engageable with the teeth of the toothed disc 24 is interposed between the bottom wall 32 of the bar 28 and the top face 14 of the home plate 12. The pawl member 40 has a lug 44 to which an end of a resilient member 46, such as a helical spring, is attached. An opposite end of the resilient member 46 is attached to a suitable position on the bar 28. Thus, the resilient member 46 provides a spring force biasing the pawl member 40 toward the toothed disc 24 and thus facilitating the toothed engagement between the pawl member 40 and the toothed disc 24. The pawl member 40 and the toothed disc 24 with the spring 46 acting therebetween form a bi-directional ratchet mechanism, which allows the bar 28 to rotate in both clockwise and counterclockwise directions, while being selectively set at any desired angular position by having the teeth 42 of the pawl member 40 engaging teeth of the toothed plate 24 at corresponding position. The ratchet mechanism allows for a single hand operation for angularly moving the bar 28.

[0014] Preferably, the pawl member 40 has guide tabs 48 movably received in guide slits (not shown) defined in the bottom wall 32 of the bar 28 for guiding the relative movement of the pawl member 40 with respect to the bar 28.

[0015] An elongate slot 50 is defined in the top wall 30 of the bar 28 and has an opening (not labeled) at a remote end of the bar 28. A slide 52 is movably received in the channel bar 28. A threaded rod 54 extends from the slide 52 through the slot 50 in a movable manner. An inner threaded hole (not shown) is defined in the lower end of the stand 16 to threadingly engage the threaded rod 54 thereby securing the stand 16 to the bar 28. The threading engagement allows the stand 16 to securely attach to the slide 52 with opposite banks of the slot 50 interposed therebetween. Thus, the friction between the banks of the slot 50 and the slide 52 and the lower end of the stand 16 helps to securely fix the stand 22 to the bar 28, while allowing selectively moving the slide 52 and the stand 16 to any desired radial position along the slot 50 of the bar 28 by loosening the threading engagement between the stand 16 and the slide 52.

[0016] Also referring to Figure 3, to change the angular position of the stand 16 and thus the baseball (not shown) supported thereon, one simply holds the stand 16

(or alternatively, the bar 28) and rotates about the center axle 20 with such a sufficient torque as to overcome the resilient engagement between the pawl member 40 and the toothed disc 24. Thus, the engagement between the pawl member 40 and the toothed disc 24 is broken and the stand 16 is free of constrain in angular displacement. One advances the stand 16 as far as one wishes from an initial or current position (shown in solid lines in Figure 3) to any desired destination position (shown in phantom lines) along the center axle 20. The biasing force of the resilient member 46 automatically re-assumes the engagement between pawl member 40 and the toothed disc 24 thereby securely retaining the stand 16 at the desired angular position.

[0017] Although the present invention has been described with reference to the preferred embodiment thereof, it is apparent to those skilled in the art that a variety of modifications and changes may be made without departing from the scope of the present invention which is intended to be defined by the appended claims.